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FISHER, PAUL R	
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NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/743,587	ANDERSON, NOEL WAYNE	
	Examiner	Art Unit	
	PAUL R. FISHER	3689	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Amendment received on June 22, 2009 has been acknowledged. Claims 1-29 are currently pending and have been considered below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-7, 10-13, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darin Motz (WO 00/35265) hereafter Motz, in view of Hayami et al. (5,369,588) hereafter Hayami, further in view of Mueller et al. (4,950,118) hereafter Mueller**.

As per claim 1, Motz discloses a method for locating harvested material (Page 8, line 20 through page 9, line 14; discloses that the harvested material is being located for pick up by the second agricultural machine), the method comprising:

receiving material data including material location data on a material location of harvested material within a work area (Page 8, lines 6-19; discloses that various data is received, which includes harvest volume indicating system and a first position determining system which together comprise the data which shows the harvested material location within a work area at a given time);

obtaining background data on at least one established transportation path within the work area (Page 8, lines 6-19, page 6, lines 11-18; disclose that the site database stores a dynamic map of the agricultural field which includes transportation path within the work area, this information is obtained to help determine where the second agricultural machine should pick up the harvested material);

determining a forwarder location of a forwarder (Page 6, lines 19-30; disclose that the system tracks the position data of the second agricultural machine which is considered to be the forwarder since they are both transporting harvested material from a location to another location);

estimating economic cost factors between the forwarder location and the material location (Page 8, line 6, through page 9, line 14, page 17, line 13-23; disclose that economic factors are taken into consideration such as ensuring that the harvester is not sitting idle waiting to be unloaded costing money, thus the goal is to greatly increase the amount of crops that can be harvested in a day); and

selecting a preferential path plan between the forwarder location and the material location consistent with the background data and minimization of the economic cost factors (Page 8, line 29, through page 9, line 4; discloses that all of the gathered information is used to create a desired path between the second agricultural machine or forwarder and the material location in this case the material in the first agricultural machine and this path is based on the background data and the goal is to minimized economic cost so that the harvester does not have to sit idle and can continue to gather more material).

Motz fails to explicitly disclose estimating associated with corresponding candidate paths or segments of candidate paths.

Hayami, which talks about navigation system for motor vehicles, teaches estimating or calculating associated with corresponding candidate paths or segments of candidate paths (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by Motz, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

The combination of Motz and Hayami fail to explicitly disclose that the location is for unloaded material and wherein the unloaded harvested material is unloaded from a harvester that harvested the harvested material, and wherein the material location of the unloaded harvested material is a different location than the forwarder location of the forwarder.

Mueller, which talks about a system for loading and unloading trailers using automatic guided vehicles, teaches that it is old and well know to acquire the position of

unloaded material, wherein the unloaded harvested material is unloaded from a harvester that harvested the harvested material, and wherein the material location of the unloaded harvested material is a different location than the forwarder location of the forwarder (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it also says it could be equally applicable in other configurations, it would have been obvious to use this method instead of unloading from the carts as shown in Motz since the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited).

Therefore, from this teaching of Mueller, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by the combination Motz and Hayami, with the location being of the unloaded material and the location being different from the harvester as taught by Mueller for the purpose of tracking the various loads or harvested materials and eliminating the need for the forwarder to follow the harvester around. By doing this the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited.

As per claim 2, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses establishing a drop-off location for the

harvested material (Page 10, line 22 through page 11, line 22; discloses that a drop-off location is established in this case a truck which will transport the harvested crop to market or other destination, this truck being parked on a road or driveway along the side of the field);

determining a path plan between the material location and the drop-off location (Page 10, line 22 through page 11, line 22; discloses that a path plan is determined from the harvester to the truck and the second agricultural machine travels along the desired path).

As per claim 3, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses wherein the path plan comprises a shortest possible path that traverses at least one of a harvested area, an unharvested area, and a transportation path associated with the work area (Page 8, line 29 through page 9, line 14; discloses that the path is chosen to go through the already harvested area so the crops that have yet to be harvested are not disturbed).

As per claim 4, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses wherein the material location and the harvested area is updated on a regular basis (Page 6, line 19 through page 7, line 2; disclose that the model is updated in real-time as the machines traverse the field, the Examiner considers real-time to be on a regular basis).

Mueller teaches receiving harvester data including harvester location data on a harvester location of a harvester within the work area, wherein the material location of the unloaded harvested material is different location than the harvester location of the

harvester (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it also says it could be equally applicable in other configurations, it would have been obvious to use this method instead of unloading from the carts as shown in Motz since the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited).

As per claim 5, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses wherein the harvested material comprises a material selected from the group consisting of grain, wood, cellulose, logs, and crops (Page 16, lines 20-22 and page 17, lines 19-23; disclose that the harvested material includes crops which include grain, wheat, or hay).

Mueller teaches the material is distinguished from one another by an optical sensor (Col. 3, line 35 through col. 4, line 34; teaches that the system can use optical sensors to distinguish the deposited loads).

As per claim 6, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses wherein the material location is updated after the addition of a new material location (Page 6, line 11 through page 7, line 2; discloses that the model is updated in real-time as things happen and as the

machines traverse the field so as the harvester arrives at a new location the material is at a new location the material location is updated).

As per claim 7, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz furthers discloses wherein the background data comprises transient data associated with at least one of a time-dependent location of a machine in the work area, a time-dependent location of a person within the work area, and a time-dependent definition of a harvested area associated with the work area, and wherein both the background data and the material data are specified by a user using a user interface of the data processing system (Page 8, line 20-28; discloses that data includes determining an expected location of the first agricultural machine at the expected time. Page 10, lines 1-9; disclose a user interface for displaying various conditions).

As per claim 10, Motz discloses a data processing system implemented method for locating harvested material (Page 8, line 20 through page 9, line 14; discloses that the harvested material is being located for pick up by the second agricultural machine), the method comprising:

collecting, by the data processing system, material data including at least one of harvester location, material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material (Page 8, lines 6-19; discloses that various data is received, a first position determining system which gives the location of the harvester).

obtaining, by the data processing system, background data for the work area (Page 8, lines 6-19, page 6, lines 11-18; disclose that the site database stores a dynamic map of the agricultural field which includes transportation path within the work area, this information is obtained to help determine where the second agricultural machine should pick up the harvested material);

storing, by the data processing system, the collected material data and the obtained background data (Page 6, line 19 through page 7, line 2; discloses that the information is stored either on the first and second agricultural machines or located remotely); and

making available the stored data to a forwarder (Page 6, line 19 through page 7, line 2; discloses that the information is stored on the first and second agricultural machines where the second agricultural machine is equivalent to a forwarder since it moves material from the harvester to the truck).

receiving stored data via an electromagnetic signal (wireless signal) (Page 10, lines 10-21; disclose that the first and second agricultural machines and the central site can all communicate through a wireless communication link);

determining a forwarder location of a forwarder in the work area (Page 8, lines 6-19; disclose that the second position determining system tracks the position of the second agricultural machine in this case a forwarder);

identifying a preferential path plan between a forwarder location and a material location and between the material location and the drop-off destination based on the stored data, including material data and background data, and based on cost factor data

(Page 8, line 6 through page 9, line 14; discloses that the desired path is determined from the forwarder to the material. Page 11, lines 11-15; discloses that upon getting the harvested material the second agricultural machine travels along the desired path to a truck which is the drop-off location).

Motz fails to explicitly disclose the identifying is done according to the efficient path cost.

Hayami, which talks about navigation system for motor vehicles, teaches estimating or calculating associated with corresponding candidate paths or segments of candidate paths (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by Motz, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

The combination of Motz and Hayami, fails to explicitly disclose wherein the material data includes at least one of material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the

material identifier, the material attribute, and the material attribute value are each associated with the harvested material, and wherein the material location is a location of the harvested material unloaded from a harvester that harvested the harvested material.

Mueller, which talks about a system for loading and unloading trailers using automatic guided vehicles, teaches that it is old and well know to acquire the position of unloaded material wherein the material location data is each associated with the harvested material, and wherein the material location is a location of the harvested material unloaded from a harvester that harvested the harvested material (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it also says it could be equally applicable in other configurations, it would have been obvious to use this method instead of unloading from the carts as shown in Motz since the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited).

Therefore, from this teaching of Mueller, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by the combination Motz and Hayami, with the location being of the unloaded material and the location being different from the harvester as taught by Mueller for the purpose of tracking the various loads or

harvested materials and eliminating the need for the forwarder to follow the harvester around. By doing this the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited.

As per claim 11, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses wherein the making available comprises transmitting the stored data from the harvester directly to the forwarder via an electromagnetic signal (wireless signal) that the harvester transmits to the forwarder (Page 10, lines 10-21; disclose that the first and second agricultural machines and the central site can all communicate through a wireless communication link, it also states that it does not have to go through a central site that the database can be located on the machines themselves thus the machines would talk directly to each other).

Mueller further teaches that the collected material data is stored in response to unloading the harvested material from the harvester (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited, from this it is shown that the system detects when a load is deposited and stores it in the system for pick up).

As per claim 12, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses obtaining background data comprises obtaining obstruction data, hazard data, ground cover data, topographical data, route data, path data, and vegetation data for at least part of the work area (Page 6, lines 11-18; disclose that the database stores a dynamic map or model of the agricultural field,

which includes geographic information representing the topography of the field, such as agricultural field already harvested, obstacles within the field such as rocks or trees, boundaries of the field and the like. Page 9, lines 3-7; discloses that it tracks paths or routes).

While Motz discloses various kinds of data being stored it fails to explicitly disclose specific data such as established transportation route data established transportation path data.

Hayami, which talks about navigation system for motor vehicles, teaches storing information for all possible paths and routes (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by Motz, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

As per claim 13, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses obtaining background data comprises (i) obtaining static data and transient data as the background data, wherein the static

data remains generally constant over a greater sample period and wherein the transient data tends to vary over the greater sample period, and (ii) providing a user interface that allows a user to override the background data that is obtained (Page 6, line 11 through page 7, line 2; discloses that the information is gathered about the field which is topography information which is static data since it remains generally constant over a greater sample period, it also shows that it tracks the vehicles which is considered to be transient data since it tends to vary over the greater sample period. Page 9, lines 15-30; discloses that while the system is automatic it allows for manual override by the operator).

As per claim 16, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses obtaining background data via forwarder electronics for supplementing, augmenting or replacing the stored background data (Page 6, line 19 through page 7, line 2; discloses that the second position determining system located on the second agricultural machine or the forwarder updates its position to the site database which stores the background data, this information is updated in real-time as the machines traverse the field).

As per claim 17, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses presenting the preferential path plan to the operator via a user interface (Page 10, lines 1-9; discloses that an operator of either the first or second agricultural machines are presented with a display that will display the desired path).

As per claim 18, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, Motz further discloses wherein the cost factor data comprises one or more of the following times: estimating travel time between a starting point and a destination point of a candidate path plan or segment, empirical travel time between a starting point and a destination point of candidate path plan or segment, a travel distance between a starting point and a destination point of a candidate path plan or segment, and a travel distance between a material location and one or more corresponding drop-off locations (Page 8, line 20 through page 9, line 14; discloses that the invention tracks the estimated travel time between a starting point and a destination point of a candidate path plan or segment, in this case the invention tracks the estimated time the first agricultural machine will be at a location and then directs the second agricultural machine to that location on a desired path at a desired speed so it can reach that location on time).

4. **Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darin Motz (WO 00/35265) hereafter Motz, in view of Hayami et al. (5,369,588) hereafter Hayami as applied to claim 1 above, further in view of Mueller et al. (4,950,118) hereafter Mueller, further in view of Weigelt et al. (5,712,782) hereafter Weigelt**.

As per claim 8, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, but fails to explicitly disclose wherein selecting a preferential path plan further comprises considering environmental factors to reduce soil compaction from the forwarder.

Weigelt, which talks about a method of optimizing utilization of a group of agricultural machine, teaches considering environmental factors to reduce soil compaction from the machine (Col. 7, lines 40-55; teach that moisture data and ground and grain moisture is used to determine the ability to travel over the field).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of locating harvested material provided by the combination of Motz and Hayami, with the considering environmental factors as taught by Weigelt, to ensure that the vehicle and travel over the field and not get stuck in the ground due to mud or some other environmental condition.

As per claim 9, the combination of Motz, Hayami and Mueller teaches the above-enclosed invention, but fails to explicitly disclose wherein selecting a preferential path plan further comprises considering vehicle dynamic constraints related to the handling and maneuvering capabilities of the forwarder that is transporting a certain corresponding level of a load of the harvested material.

Weigelt, which talks about a method of optimizing utilization of a group of agricultural machine, teaches considering vehicle dynamic constraints related to the handling and maneuvering capabilities of the forwarder that is transporting a certain corresponding level of a load of the harvested material (Col. 7, lines 40-55; teach that moisture data and ground and grain moisture is used to determine the ability to travel over the field, this information can be used to determine if a vehicle would be able to cross the field given it current weight and the conditions of the ground which is considered to be vehicle dynamic constraints related to handling and maneuvering).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of locating harvested material provided by the combination of Motz and Hayami, with the considering vehicle constraints as taught by Weigelt, to ensure that the vehicle and travel over the field and not get stuck in the ground due to mud or some other environmental condition.

5. **Claims 14-15, 23 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darin Motz (WO 00/35265) hereafter Motz, in view of Mueller et al. (4,950,118) hereafter Mueller**.

As per claim 14, Motz discloses a data processing system implemented method for facilitating locating harvested material (Page 8, line 20 through page 9, line 14; discloses that the harvested material is being located for pick up by the second agricultural machine), the method comprising:

collecting, by the data processing system, material data including at least two of material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material (Page 8, lines 6-19; discloses that various data is received, a first position determining system which gives the location of the harvester, from this it shown that both the material location and material value or amount are known by the system and collected by the various sensors).

marking the harvested material with a marker for referencing the collected material data (Page 6, line 11 through page 7, line 10; discloses that the system tracks

both the already harvested areas of the field and the level of harvested material already on the harvester which is marking the harvested material).

Motz, fails to explicitly disclose wherein the harvested material is material that has been unloaded from a harvester that harvested the material; and wherein the marker is at least one of a bar code, a uniform product code (UPC), an optical code, a radio frequency identification tag, an optical tag, and a tag, and the marker is usable to locate the harvested material that has been unloaded from the harvester.

Mueller, which talks about a system for loading and unloading trailers using automatic guided vehicles, teaches that it is old and well know to acquire the position of unloaded material wherein the material location data is each associated with the harvested material, and wherein the marker is an optical tag (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. These sensors can be optical and used as targets. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it also says it could be equally applicable in other configurations, it would have been obvious to use this method instead of unloading from the carts as shown in Motz since the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited).

Therefore, from this teaching of Mueller, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of

locating harvested material provided by Motz, with the location being of the unloaded material and the location being different from the harvester as taught by Mueller for the purpose of tracking the various loads or harvested materials and eliminating the need for the forwarder to follow the harvester around. By doing this the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited.

As per claim 15, the combination of Motz and Mueller teaches the above-enclosed invention, Mueller teaches reading the marker associated with the harvested material by a forwarder that includes forwarder electronics (Col. 3, line 35 through col. 4, line 34; teaches that with optical sensors a AGV can read that there is a load which has been deposited and go to pick it up for delivery).

As per claim 23, Motz discloses a system for locating harvested material in a work area (Page 8, line 20 through page 9, line 14; discloses that the harvested material is being located for pick up by the second agricultural machine), the system comprising:

a harvested material attribute sensor for collecting material data including at least two of harvester location data, material location data, a material identifier, a material attribute, and a material attribute value, wherein the material location data, the material identifier, the material attribute, and the material attribute value are each associated with the harvested material (Page 5, line 21 through page 6, line 10; discloses a sensor to collecting data on harvester location data. Page 8, lines 6-19; discloses that various data is received, a first position determining system which gives the location of the harvester, from this it shown that both the material location and material value or amount are known by the system and collected by the various sensors);

a navigational/environmental sensor for obtaining background data for the work area (Page 6, lines 5-10; discloses a GPS receiver. Page 6, lines 11-18; discloses that topography information is collected in regards to the field);

a storage device for storing the collected material data and the obtained background data (Page 6, line 11 through page 7, line 2; discloses that the information is stored in either the first or second agricultural machines or both as well as it can be stored in a central location); and

a wireless communications device for making available the stored data to a forwarder (Page 10, line 10-21; discloses that harvester or first agricultural machine, the forwarder or second agricultural machine and the central location all communicate through a wireless communication link).

Motz, fails to explicitly disclose wherein the harvested material is material that has been unloaded from a harvester that harvested the material.

Mueller, which talks about a system for loading and unloading trailers using automatic guided vehicles, teaches that it is old and well know to acquire the position of unloaded material wherein the material location data is each associated with the harvested material, (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. These sensors can be optical and used as targets. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it

also says it could be equally applicable in other configurations, it would have been obvious to use this method instead of unloading from the carts as shown in Motz since the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited).

Therefore, from this teaching of Mueller, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by Motz, with the location being of the unloaded material and the location being different from the harvester as taught by Mueller for the purpose of tracking the various loads or harvested materials and eliminating the need for the forwarder to follow the harvester around. By doing this the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited.

As per claim 29, the combination of Motz and Mueller teaches the above-enclosed invention, Motz further discloses a central processor determining the preferential path plan from the collected material data and background data collected by one or more harvesters and sending the determined preferential path plan to a plurality of forwarders operating in the work area (Page 8, line 6 through page 9, line 14; disclose that the information is collected and then analyzed by the control system which then sends the desired path to the second agricultural machine. Page 5, lines 6-20; disclose that while the described using only two machines it could be carried out with any number of machines).

6. **Claims 19-22 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darin Motz (WO 00/35265) hereafter Motz, in view of Mueller et al. (4,950,118) hereafter Mueller, further in view of Hayami et al. (5,369,588) hereafter Hayami**.

As per claim 19, the combination of Motz and Mueller teaches the above-enclosed invention, Motz further discloses reading the marker for referencing the stored data (Page 8, lines 6-19; disclose that the stored information is read including various markers, such as position data of each of the agricultural machines and the site data which includes the field information)

determining, in response to the reading of the marker, a forwarder location of a forwarder in the work area (Page 8, lines 6-19; disclose that the second position determining system tracks the position of the second agricultural machine in this case a forwarder);

identifying a preferential path plan between the forwarder location and a material location and between the material location of the harvested material that has been unloaded from the harvester and the drop-off destination based on the stored data, including material data and background data, and based on cost factor data (Page 8, line 6 through page 9, line 14; discloses that the desired path is determined from the forwarder to the material. Page 11, lines 11-15; discloses that upon getting the harvested material the second agricultural machine travels along the desired path to a truck which is the drop-off location).

The combination of Motz and Mueller fails to explicitly disclose the identifying is done according to the efficient path cost.

Hayami, which talks about navigation system for motor vehicles, teaches estimating or calculating associated with corresponding candidate paths or segments of candidate paths (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by the combination of Motz and Mueller, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

As per claim 20, the combination of Motz, Mueller and Hayami teaches the above-enclosed invention, Motz further discloses obtaining background data via forwarder electronics for supplementing, augmenting or replacing the stored background data (Page 6, line 19 through page 7, line 2; discloses that the second position determining system located on the second agricultural machine or the

forwarder updates its position to the site database which stores the background data, this information is updated in real-time as the machines traverse the field).

As per claim 21, the combination of Motz, Mueller and Hayami teaches the above-enclosed invention, Motz further discloses presenting the preferential path plan to the operator via a user interface (Page 10, lines 1-9; discloses that an operator of either the first or second agricultural machines are presented with a display that will display the desired path).

As per claim 22, the combination of Motz, Mueller and Hayami teaches the above-enclosed invention, Motz further discloses wherein the cost factor data comprises one or more of the following times: estimating travel time between a starting point and a destination point of a candidate path plan or segment, empirical travel time between a starting point and a destination point of candidate path plan or segment, a travel distance between a starting point and a destination point of a candidate path plan or segment, and a travel distance between the material location and one or more corresponding drop-off locations (Page 8, line 20 through page 9, line 14; discloses that the invention tracks the estimated travel time between a starting point and a destination point of a candidate path plan or segment, in this case the invention tracks the estimated time the first agricultural machine will be at a location and then directs the second agricultural machine to that location on a desired path at a desired speed so it can reach that location on time).

As per claim 24, the combination of Motz and Mueller teaches the above-enclosed invention, Motz further discloses another wireless communications device for

receiving stored data via an electromagnetic signal (Page 10, line 10-21; discloses that harvester or first agricultural machine, the forwarder or second agricultural machine and the central location all communicate through a wireless communication link).

a location-determining receiver for determining a forwarder location of a forwarder in the work area (Page 5, line 21 through page 6, line 10; discloses that the second agricultural machine is tracked by a second position determining system);

a data processor for identifying a preferential path between the forwarder location and the material location and between the material location of the harvested material unloaded from the harvester and the drop-off destination based on the stored data, including the material data and the background data, and based on a cost factor data (Page 8, line 6 through page 9, line 14; discloses that the desired path is determined from the forwarder to the material. Page 11, lines 11-15; discloses that upon getting the harvested material the second agricultural machine travels along the desired path to a truck which is the drop-off location).

Mueller teaches that it is old and well know to acquire the position of unloaded material (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. These sensors can be optical and used as targets. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it also says it could be equally applicable in other configurations, it would have been obvious to use

this method instead of unloading from the carts as shown in Motz since the harvester would not have to stop and the forwarder would only have to pick up the loads as deposited).

The combination of Motz and Mueller fails to explicitly disclose the identifying is done according to the efficient path cost.

Hayami, which talks about navigation system for motor vehicles, teaches estimating or calculating associated with corresponding candidate paths or segments of candidate paths (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by the combination of Motz and Mueller, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

As per claim 25, the combination of Motz and Mueller teaches the above-enclosed invention, Motz further discloses a reading device reading a marker for

referencing stored data (Page 8, lines 6-19; discloses that the control system reads in the various data or markers);

another location-determining receiver for determining a forwarder location of a forwarder in the work area (Page 5, line 21 through page 6, line 10; discloses that the second agricultural machine is tracked by a second position determining system);

a data processor for identifying a preferential path between the forwarder location and the material location and between the material location of the harvested material unloaded from the harvester and the drop-off destination based on the stored data, including material data and background data, and based on a cost factor data (Page 8, line 6 through page 9, line 14; discloses that the desired path is determined from the forwarder to the material. Page 11, lines 11-15; discloses that upon getting the harvested material the second agricultural machine travels along the desired path to a truck which is the drop-off location).

Mueller teaches that it is old and well know to acquire the position of unloaded material (Col. 3, line 35 through col. 4, line 34; teaches that through the use of Load sensing sensors a the location of a load is detected which is to be picked up, this load is one which has been deposited. These sensors can be optical and used as targets. From this it is shown that a load is deposited by a vehicle, which in this case would be the harvester, the location of the load is different from that harvester now that the load has been deposited. While the invention is directed toward a loading dock, it also says it could be equally applicable in other configurations, it would have been obvious to use this method instead of unloading from the carts as shown in Motz since the harvester

would not have to stop and the forwarder would only have to pick up the loads as deposited).

The combination of Motz and Mueller fails to explicitly disclose the identifying is done according to the efficient path cost.

Hayami, which talks about navigation system for motor vehicles, teaches estimating or calculating associated with corresponding candidate paths or segments of candidate paths (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by Motz, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

As per claim 26, the combination of Motz and Mueller teaches the above-enclosed invention, Motz further discloses an estimator for estimating economic cost factors between the forwarder location and the material location (Page 8, line 6, through page 9, line 14, page 17, line 13-23; disclose that economic factors are taken into consideration such as ensuring that the harvester is not sitting idle waiting to be

unloaded costing money, thus the goal is to greatly increase the amount of crops that can be harvested in a day); and

a selector for selecting a preferential path plan between the forwarder location and the material location consistent with the background data and minimization of the economic cost factors (Page 8, line 29, through page 9, line 4; discloses that all of the gathered information is used to create a desired path between the second agricultural machine or forwarder and the material location in this case the material in the first agricultural machine and this path is based on the background data and the goal is to minimized economic cost so that the harvester does not have to sit idle and can continue to gather more material).

The combination of Motz and Mueller fails to explicitly disclose estimating associated with corresponding candidate paths or segments of candidate paths.

Hayami, which talks about navigation system for motor vehicles, teaches estimating or calculating associated with corresponding candidate paths or segments of candidate paths (Col. 1, line 18 through col. 2, line 12; and col. 2, line 62 through col. 3, line 19; teaches that it is old and well know to do the calculations for all possible routes including their segments to ensure that the shortest or most economical route is chosen).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by the combination of Motz and Mueller, with the calculating or estimating all possible routes as shown in Hayami, for the purpose of

ensuring that the shortest or most economical route is chosen. By doing this the route ensures that the least amount of obstacles and detours to get to the final destination thus using less fuel and ensuring that in the case of Motz the harvester is allowed to continue uninterrupted.

As per claim 27, the combination of Motz, Mueller and Hayami teaches the above-enclosed invention, Motz further discloses the data processor further comprises a guidance module for presenting guidance information on the selected preferential path plan to a user via a user interface (Page 10, lines 1-9; disclose an operator display for displaying the path to a user).

As per claim 28, the combination of Motz and Mueller teaches the above enclosed invention, Motz further discloses a user interface (Page 10, lines 1-9; discloses where the system has a user interface).

The combination of Motz and Mueller fails to disclose where the user interface is used to enter data.

Hayami, which talks about navigation system for motor vehicles, teaches a user interface for entering the material data to supplement or complement an output of the harvested material attribute sensor (Col. 2, lines 62-68; teaches that the system has a manipulating unit where the user can enter data).

Therefore, from this teaching of Hayami, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify method of locating harvested material provided by the combination of Motz and Mueller, with the

entering of data by the user as shown in Hayami, for the purpose of allowing the user to change or modify information in the system.

Response to Arguments

7. Applicant's arguments filed June 22, 2009 have been fully considered but they are not persuasive.

8. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL R. FISHER whose telephone number is (571)270-5097. The examiner can normally be reached on Mon/Fri [8am/4:30pm].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janice Mooneyham can be reached on (571)272-6805. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PRF

/Dennis Ruhl/

Primary Examiner, Art Unit 3689